Respected Commission Members:

I am a customer of Comcast living in San Francisco, and would like to offer my comments on the issue of "blocking" or "delaying" peer-to-peer (P2P) internet traffic (WC 07-52). I wish to make the point that, while much of the public focus has been on Comcast's actions with respect to BitTorrent traffic, their methods of managing network bandwidth also adversely affect other internet uses.

Many internet applications are moving toward a P2P model, where end users share data as peers on the network, as opposed to simply communicating with a centralized server. This does not conform to the earliest public use of the internet, which primarily involved the downloading of content from web sites. It appears evident that Comcast's methods for managing network traffic, as well as their underlying assumptions for these methods, still have at their core the outdated and mistaken notion that people are simply downloading content to a web browser a small portion at a time, and that delays to this traffic will have little or no negative impact.

A specific example is internet gaming. While it may be easy to characterize gaming as a somehow less worthy or less valid form of internet use, I would hope that the Commission would not proceed under this assumption. Several large corporations, including Sony and Microsoft, are investing hundreds of millions of dollars to further develop online gaming capabilities, and tens of millions of paying customers use these applications. In P2P gaming, where end users directly exchange time-sensitive data between them, as opposed to "downloading" data from a website, any artificial connection resets, or delay of data packets - such as those which Comcast has admitted to - effectively break the application altogether. Online games are inherently time sensitive, and one simply cannot have an online interactive game where data is being delayed unnecessarily between participants. To visualize this, imagine trying to shoot an arrow at some creature, only to have your arrow delayed by two seconds while the creature continues to move.

Furthermore, gaming applications themselves typically detect a poor connection, where latency prevents the end user from sending and receiving data in a timely manner, and will force disconnetion of that user to protect other participants from the negative effects of delayed data. And where one of the users is acting as the central host for a P2P game, Comcast evidently treats this person as a high-bandwidth-user, and subjects them to the packet delays and connection resets for which they are rightfully being criticized. The result is the unceremonius termination of the game session for all users. I have repeatedly encountered such problems while using the Comcast "High-Speed Internet" service.

My personal attempts to raise this issue with Comcast's customer support apparatus have been stymied by lack of informed customer service representatives, and apparent indifference to consumer complaints. I've been unable to obtain any information about how network packets are being delayed

or P2P connections forcibly reset, nor have I been able to speak to anyone knowledgeable about network traffic, to whom I could explain how connection resets and packet delay effectively break gaming applications completely. Nonetheless, Comcast continues to market its service with specific trumpeting of online gaming capabilities. They also create the false impression with customers that an upgrade to a higher bandwidth limit (i.e. more expensive) service level will improve the online gaming experience.

Comcast's methods of forging reset packets for P2P connections, and artificially delaying select network traffic, do not constitute "reasonable network management". These methods effectively break some P2P applications completely. It would be more reasonable to have a certain known bandwidth limit, clearly disclosed to consumers, under which P2P applications could function with unfettered flow of data; the key issue in online gaming is not the size of the "pipe", but rather the timely flow of data (minimal latency). I do not know why Comcast's engineers have not been able to devise a better network management methodology, if limiting bandwidth use is their goal. Furthermore, Comcast's refusal to publicly disclose their traffic management methods, or to inform their customers as to what forms of data have been deemed "acceptable" and free from interference, should not be an acceptable business practice. It is my hope as a consumer and an American citizen, that the FCC will act in the public interest to force remedies on Comcast and other internet service providers, and to protect the unfettered flow of data on the internet without discrimination, and with full disclosure.

Sincerely,

Joseph A. Pawlicki
San Francisco, California
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